

Corrected Section of the Non-Compliant Amendment Dated December 15, 2003

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

3        digital signal and a modulation circuit responsive to said digital to analog converter for  
4        providing said constant average analog output signal.

1                  4. (Original) The isolation system of claim 1 in which said analog to digital circuit  
2        includes an analog to digital converter responsive to said input analog signal from said  
3        isolation barrier to provide a digital signal, and a decoder circuit responsive to said digital  
4        signal to provide said digital output response.

1                  5. (Original) The isolation system of claim 1 in which said analog to digital circuit  
2        includes a demodulator circuit responsive to said input analog signal from said isolation  
3        barrier, and an analog to digital converter responsive to said analog signal to provide said  
4        digital output signal.

1                  6. (Original) The isolation system of claim 1 in which said analog to digital circuit  
2        includes an analog to digital converter.

1                  7. (Original) The isolation system of claim 1 in which said digital to analog circuit  
2        includes a digital to analog converter.

1                  8. (Original) The isolation system of claim 1 in which said digital to analog circuit  
2        includes a termination resistance connected with said isolation barrier.

1           9. (Original) The isolation system of claim 1 in which said analog to digital circuit  
2       includes a termination resistance connected with said isolation barrier.

1           10. (Original) The isolation system of claim 1 in which said isolation element  
2       includes a capacitance.

1           11. (Original) The isolation system of claim 1 in which said isolation element  
2       includes a transformer.

1           12. (Original) The isolation system of claim 1 in which said analog to digital circuit  
2       includes a common mode interference signal sensing circuit and a summing circuit for  
3       removing the common mode interference signal from the received analog signal from the  
4       isolation barrier.

1           13. (Original) The isolation system of claim 1 in which said digital signal to be  
2       communicated across said isolation barrier includes data.

1           14. (Original) The isolation system of claim 1 in which said digital signal to be  
2       communicated across said isolation barrier includes control information.

1           15. (Original) The isolation system of claim 14 in which said digital signal to be  
2       communicated across said isolation barrier includes reference and calibration information.

1           16. (Original) The isolation system of claim 1 in which said digital signal to be  
2       communicated across said isolation barrier includes data and control information.

1           17. (Cancelled)

1           18. (Cancelled)

1           19. (Currently Amended) The isolation system of claim 4 in which the input analog  
2       signal is a constant average signal.

1           20. (Currently Amended) The isolation system of claim 5 in which the input analog  
2       signal is a constant average signal.

1           21. (Original) A bi-directional isolation system with analog communication  
2       across an isolation barrier comprising:

3                   an isolation barrier circuit having at least one isolation element;

4                   a first digital to analog circuit having an analog output coupled to a  
5       first side of the isolation barrier and an input for receiving an input digital signal to be  
6       communicated across the isolation barrier;

7                   a first analog to digital circuit having an input coupled to the first  
8       side of the isolation barrier circuit;

9                   a second digital to analog circuit having an analog output coupled  
10      to a second side of the isolation barrier and an input for receiving an input digital signal

11 to be communicated across the isolation barrier; and  
12 a second analog to digital circuit having an input coupled to the  
13 second side of the isolation barrier circuit.

1 22. (Original) The bi-directional isolation system of claim 21 in which the input  
2 digital signals are communicated simultaneously across the isolation barrier circuit.

1 23. (Original) The bi-directional isolation system of claim 21 in which the input  
2 digital signals are communicated alternately across the isolation barrier circuit.

1 24. (Original) The bi-directional isolation system of claim 21 further including at  
2 least one echo cancellation circuit for removing a local echo signal from the input of at  
3 least one of said first and second analog to digital circuits.

1 25. (New) The isolation system of claim 1 in which the analog to digital circuit is  
2 configured to decode the constant average input analog signal.